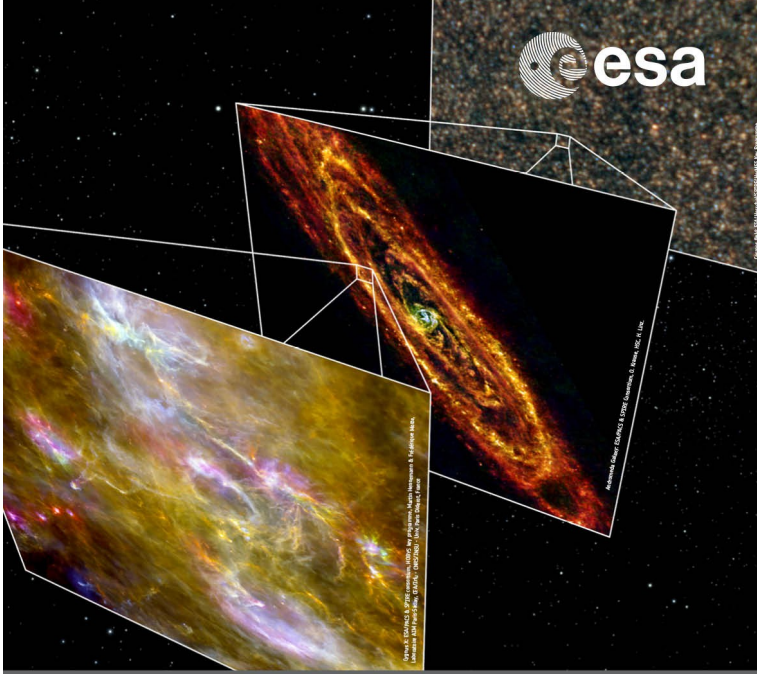


# Star Formation Across Space and Time

## Second Announcement and Call for Papers



→ **STAR FORMATION ACROSS SPACE AND TIME**

11-14 November 2014  
ESA/ESTEC, Noordwijk, The Netherlands

*The objective of this meeting is to bring together astronomers interested in all aspects of star formation, from local galactic to extreme extra-galactic high-z conditions. The meeting poses the fundamental question: Are there universal processes of star formation across space and time?*

<b>Science Organising Committee</b>	<b>Invited Speakers</b>	<b>Local Organising Committee</b>
Philippe André	Joao Alves	Clare Bingham
Steve Eales	Daniela Calzetti	Göran Pilbratt
David Elbaz	Avishai Dekel	Congrex - ESA Conference bureau
Bruce Elmegreen	Mark Dickinson	
Neal Evans	Phil Hopkins	
Yasuo Fukui	Shu-ichiro Inutsuka	
Eve Ostriker	Frédérique Motte	
Göran Pilbratt	Toshikazu Onishi	
Nick Scoville	Paolo Padoveni	
Linda Tacconi	Amiel Sternberg	

[www.esa.int](http://www.esa.int) <http://congrexprojects.com/14a09/> European Space Agency

*The objective of this meeting is to bring together astronomers interested in all aspects of star formation, from local galactic to extreme extra-galactic high-z conditions. Recent advances on the subject suggest various communities can benefit from each other, and the meeting aims to facilitate cross-fertilization between researchers with different observational and theoretical backgrounds to further our understanding of star formation as observed across the spectrum. The meeting poses the fundamental question: Are there universal processes of star formation across space and time?*

**ESA/ESTEC, Noordwijk, The Netherlands, 11-14 November 2014**

<http://congrexprojects.com/14a09/>

# Second Announcement and Call for Papers

*Issued 26 May 2014, updated 21 July 2014*

## Aims and Scope

A new generation of space and ground astronomy facilities, illuminating complementary aspects, has enabled the study of star formation covering in excess of 90% of the age of the observable universe, out to redshifts well beyond  $z=6$ .

Observations of star formation in nearby molecular clouds have yielded great detail, recently 'filaments' - that either do or do not produce stars - have generated considerable interest, while observations of distant galaxies imply star formation on truly massive scales.

The local morphology-density relation is perhaps the most striking evidence that galaxies are not isolated star-forming objects, but that their properties depend on the surroundings, including accretion and other environmental effects. On the other hand, the tight relation between star-formation rates and stellar masses of galaxies suggests that internal properties are important.

What scales affect star-formation within galaxies? Can the star-formation efficiency of galaxies as a function of cosmic time be understood in the framework of the cold extragalactic infall paradigm? What regulates star-formation inside and outside galaxies?

The objective of the meeting is to bring together astronomers interested in all aspects of star formation, from local galactic to extreme extra-galactic high- $z$  conditions. The meeting aims to facilitate cross-fertilization between researchers with different observational and theoretical backgrounds. It poses the fundamental question as to whether there are universal processes of star formation across space and time.

## Format and Sessions

The meeting will feature invited talks, and contributed oral and poster presentations that are invited from the community. A single plenary session is foreseen for the meeting, together with round-table discussions in order to maximize interaction. There is space for posters close to the lecture hall, ample time will be reserved for extended coffee breaks for informal discussions and poster viewing. A conference dinner will take place.

The meeting will have the following sessions, not necessarily scheduled in this order. The topics are meant to be wide in scope, to emphasize similarities and differences between local and galaxy-wide scales, and can address but need not be limited to the the examples provided:

### Where and how do stars form?

***Confirmed invited speakers: Joao Alves, Shu-ichiro Inutsuka, and Paolo Padoan***

What fraction of low and high mass star formation takes place in filaments, shells, pillars, and other commonly observed structures in the ISM? With what efficiency? What is the 'micro-physics' of star formation in these structures? What is the origin of the IMF? Recently the ubiquity of filaments in local MCs has been established, but not all produce stars. What triggers star formation? What is the role of the filaments? Are stars forming inside and outside of filaments the same? What about star clusters?

## **Properties of star formation in the Milky Way, its satellites, and nearby galaxies**

***Confirmed invited speakers: Daniela Calzetti, Frédérique Motte, and Toshikazu Onishi***

How are the observed star-forming structures formed? Are they general hierarchical or power-law structures? What is the importance of turbulence? What is the role of atomic gas? What are the star formation laws, rates, and thresholds on molecular cloud vs galaxy-wide scales? How relevant is the understanding of 'local' processes (occurring inside individual MCs) for our understanding of global star formation (on galaxy-wide scales).

## **The galaxy 'main sequence' and 'feedback'**

***Confirmed invited speakers: Avishai Dekel and Phil Hopkins***

What causes the galaxy main sequence and deviations from it? Is the galaxy main sequence evidence for some uniformity of cosmic accretion and/or star formation laws? What controls star formation? Is star formation self regulating? What are the fundamental relations and bottlenecks? How important is feedback to the star formation process and star formation rate over cloud scales and galaxy scales? What causes star formation quenching and how does it vary with galaxy mass and environment?

## **Evolution of properties of star formation at cloud and galaxy scales with cosmic time**

***Confirmed invited speakers: Mark Dickinson and Amiel Sternberg***

How do the properties of star-forming clouds and the general ISM change with cosmic time, and with galaxy type and metallicity in the local universe? Is there a universality to cloud formation, structure, internal dynamics and disruption? To what extent can local clouds be used as templates for understanding high-z star formation? Can the origin and history of galaxies inferred from the evolutionary changes seen in the galaxy population be reconciled with our understanding of the micro- and macro-physics of star formation? Formation of galaxies like the Milky Way.

## **Call for Papers**

Contributed oral and poster presentations are solicited in the broad science areas discussed above:

- **Where and how do stars form?**
- **Properties of star formation in the Milky Way, its satellites, and nearby galaxies**
- **The galaxy 'main sequence' and 'feedback'**
- **Evolution of properties of star formation at cloud and galaxy scales with cosmic time**

The SOC is looking forward to a difficult task of scheduling a large number of contributions describing the exciting scientific progress. The current planning foresees 15-20 minute talks (including discussion).

A single plenary session is foreseen for the meeting, together with round-table discussions in order to maximize interaction. There will be ample time for poster sessions, depending on pressure there will be one or two sets of posters on display for the full or half the duration of the meeting.

All presentations will be posted online after the meeting as PDF documents.

## Calendar of events

Pre-Announcement	23 October 2013
First Announcement	24 January 2014
Second Announcement & Call for papers	26 May 2014
Registration begins	21 July 2014
Abstract submission deadline	28 August 2014
Notification of acceptance	25 September 2014
Preliminary programme	25 September 2014
Early registration fee ends	9 October 2014
Registration deadline for speakers	9 October 2014
Final programme	23 October 2014
Registration ends	6 November 2014
Symposium dates	11-14 November 2014

## Venue

The symposium will be held on 11–14 November 2014. The venue will be the ESTEC Conference Centre, Noordwijk, The Netherlands. The maximum capacity of the venue is 250 participants.

The European Space Research and Technology Centre (ESTEC) of the European Space Agency is located in Noordwijk, The Netherlands, a map showing the location and travel directions can be found at [http://www.esa.int/About\\_Us/ESTEC/How\\_to\\_get\\_to\\_ESTEC](http://www.esa.int/About_Us/ESTEC/How_to_get_to_ESTEC)



## **Scientific Organising Committee (SOC)**

The SOC consists of:

Philippe André, CEA, Saclay, France  
Steve Eales, Cardiff University, UK  
David Elbaz, CEA, Saclay, France  
Bruce Elmegreen, IBM, USA  
Neal Evans, University of Texas, USA  
Yasuo Fukui, University of Nagoya, Japan  
Eve Ostriker, Princeton University, USA  
Göran Pilbratt, ESA, Noordwijk, Netherlands  
Nick Scoville, Caltech, Pasadena, USA  
Linda Tacconi, MPE, Garching, Germany

## **Local Organising Committee (LOC)**

The LOC consists of:

Clare Bingham  
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